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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,063	06/29/2001	Alastair M. Reed	EWG-145 US	2492
23735	7590	01/23/2006	EXAMINER	
DIGIMARC CORPORATION 9405 SW GEMINI DRIVE BEAVERTON, OR 97008			EDWARDS, PATRICK L	
			ART UNIT	PAPER NUMBER
			2621	

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/895,063

Applicant(s)

REED ET AL.

Examiner

Patrick L. Edwards

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 8-12, 16, 17, 19-21, 24 and 28-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5, 11, 16, 19, 21, 24, 28-32, 36 and 37 is/are allowed.
- 6) ☒ Claim(s) 8-10, 12, 17, 20 and 35 is/are rejected.
- 7) ☒ Claim(s) 33 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ✓ 1) ☒ Notice of References Cited (PTO-892)
- ✓ 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ✓ 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11-14-2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11-14-2005 has been entered.

### ***Response to Arguments***

2. Applicant's arguments filed on 11-14-2005 have been fully considered. A response to these arguments is provided below.

## **35 USC 112, Second Paragraph Rejections**

### **Summary of Argument:**

In the previous final rejection, claim 20 was rejected under 35 USC § 112(2) as being indefinite for failing to point out and distinctly claim the subject matter which applicant regards as his invention. Applicant has neither amended this claim nor traversed the rejection.

### **Examiner's Response:**

The rejection will kindly be repeated below.

## **Prior Art Rejections**

### **Summary of Argument and Responses:**

(A) Applicant traverses the rejection under 35 USC 102(e) over Messing et al. (USPN 6,466,618). Applicant traverses this rejection and argues that claim 8 specifies that "the subject" defines the hidden reference signal—in other words, that the reference signal is manifested in the subject. Applicant gives an example that the hidden reference signal exists before an image thereof is captured. Applicant alleges that no such arrangement is taught or suggested by Messing (see remarks pg. 9).

### **Examiner's Response:**

The examiner disagrees. The limitation in question requires "capturing a plurality of low resolution electronic images of a subject, the subject defining a hidden reference signal." Messing meets this limitation because there is a hidden reference signal (the coordinate system) which is defined by the captured low resolution image.

The examiner agrees that this hidden reference signal does not exist before the image is captured. However, the examiner disagrees that a plain reading of the claim language requires that this be the case. Claims are given their broadest reasonable interpretation, and limitations from the specification are not to be read into the claims. Given the broadest reasonable interpretation of this claim, a coordinate system qualifies as the required "hidden reference signal" even though it did not exist before the image was taken.

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(B) Applicant traverses the rejection under 35 USC 102(e) over Howell (USPN 6,570,613), arguing that “the ‘means for determining’ in Howell does not perform in ‘substantially the same way’ as the ‘means for determining’ detailed in applicants’ specification (see remarks pg. 10).

**Examiner’s Response:**

Applicant is reminded that under 112(6), the prior art reference has to disclose the claimed means or equivalents thereof. Applicant’s arguments are unpersuasive in that they assume that the 112(6) equivalence standard is “substantially the same.” This is the standard used for the doctrine of equivalents, but does not apply to interpretation of 112(6) limitations. The prior art reference reads on the claim because it discloses the claimed means or equivalents thereof. The rejection will be repeated below.

***Allowable Subject Matter***

3. Claims 1-5, 11, 16, 19, 21, 24, 28-32, 36, and 37 are allowed.
4. Claims 33 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 is indefinite for failing to identify the environment of the method (the preamble of the claim) versus the steps of the method. This claim does not recite a transition such as “comprising” or “consisting of” in order to identify the end of the preamble and the start of the steps. It appears that this claim is simply a preamble without a body.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 8, 9, 20, and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Messing et al. (USPN 6,466,618).

Regarding claim 8, Messing discloses capturing a plurality of low resolution electronic images of a subject, the subject defining a hidden reference signal (col. 3 lines 21-25: The coordinate system of the captured low resolution image is a hidden reference signal.).

Messing discloses using said reference signal to determine alignment of a plurality of said low resolution images (col. 4 lines 24-36).

Messing discloses combining data from some but not all of said low resolution images into a high resolution image (col. 9 lines 10-24).

Regarding claim 9, Messing discloses that the low resolution images are aligned in accordance with the holes in a Bayer square (see Fig. 7 in conjunction with col. 6 lines 18-42).

The claim 35 limitation is addressed above with respect to claim 8 (see col. 9 lines 10-24).

Regarding claim 20, Messing discloses a method of aligning multiple low resolution images to form a high resolution image (Messing abstract, and elsewhere throughout specification).

Messing further discloses a hidden reference signal embedded in the low resolution images and visible image content are used to align said images (Messing col. 3 lines 21-25 and col. 4 lines 24-36: The reference describes a hidden reference signal embedded in the low resolution images (which is visible image content) that is used to align the images. These limitations are also discussed above with respect to claim 8.).

9. Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by Howell (USPN 6,570,613).

Howell discloses a system for generating a high resolution image from a plurality of relatively low resolution images whose pixel values are in a Bayer square configuration (col. 9 lines 48-60: The reference describes that the CFA is a Bayer pattern CFA).

Howell further discloses means for determining which of said images align with each pixel position of a Bayer square to within a specified tolerance (col. 9 lines 16-26: The reference describes a specified tolerance of a one pixel shift. This is equivalent to the one pixel shift disclosed in applicant's specification).

Howell further discloses means for combining multiple aligned low resolution images to fill in holes in a Bayer square (see e.g. Fig. 11: Again, the reference is sufficient to meet the claim limitation even with 112 sixth paragraph invoked.).

*Claim Rejections - 35 USC § 103*

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Messing (USPN 6,466,618) in view of Wolf (USPN 5,767,987)

Referring to claim 10, a plurality of low resolution images being captured and only those low resolution images which align to within a specified tolerance with the holes in a Bayer square being used to form said composite image is not explicitly explained by Messing. Messing discloses an optimum tolerance for low resolution images should fall within (Messing col. 9 lines 1-10), but fails to expressly disclose that those that do not fall within this tolerance are discarded. However, Wolf discloses that there is a certain range that displacement must fall within (Wolf col. 7 lines 20-25). It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Messing's Bayer square aligning method by introducing an offset tolerance as taught by Wolf. Such a modification would have allowed for a more efficient system that discarded images to minimize error (Wolf col. 6 line 60 – col. 7 line 25).

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honjoh in view of Ikeda et al. (USPN 6,636,551)

Referring to claim 17, Honjoh discloses

- i. Capturing a series of low resolution images, each of which contain a reference signal is illustrated by Honjoh in figure 3 by the sequential still images.
- ii. Reading the reference signal from each of the low resolution images is explained by Honjoh in column 7, lines 12-23 wherein the extracted contours are used to create a characteristic pattern (corresponding to the reference signal) in order to determine the relative displacement amounts for each frame (corresponding to the alignment of the pixels in the image). Honjoh illustrates in figure 3 that the characteristic pattern is determined from each of the sequential still images, corresponding to the low resolution images as explained by Honjoh in column 1, line 62 to column 2, line 12.

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- iii. Aligning the low resolution images in accordance the location of the reference signal is explained by Honjoh in column 8, lines 4-14 wherein the images that are substantially overlapping (within  $\Delta(n_i)$ ) are used to create a high resolution image.
- iv. Combining the aligned low resolution images into a high resolution image is illustrated by Honjoh in figure 3 by "combine frames".

Further referring to claim 17, the reference signal being a watermark signal is not explicitly explained by Honjoh. The system of Honjoh uses the characteristic pattern of the contours as the reference signal. However, Ikeda explain that a watermark orientation signal is used to align image data in column 63 lines 53-59. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a watermark as a reference signal in the system of Honjoh, as suggested by Ikeda et al, because the reference signal would provide a signal to align the images more accurately.

#### *Conclusion*

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (571) 272-7390. The examiner can normally be reached on 8:30am - 5:00pm M-F.

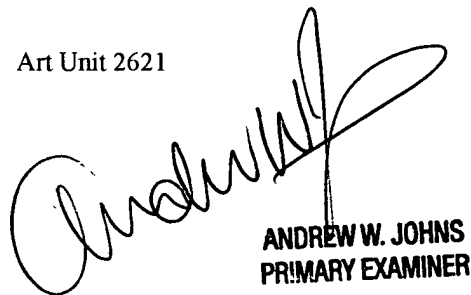

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joe Mancuso can be reached on (571) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick L Edwards

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ANDREW W. JOHNS  
PRIMARY EXAMINER